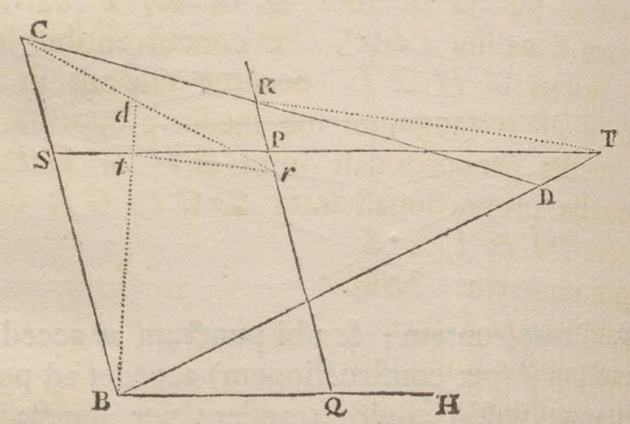
capiendo ſemper pe æqualem Pr; & agendo rectas Be, Cr concurrentes in d. Nam cum ſint Pr ad Pt, PR ad PT, pB ad PB, pe ad Pt in eadem ratione; erunt pe & Pr ſemper æquales. Hac methodo puncta trajectoriæ inveniuntur expeditiſſime, niſi mavis curvam, ut in conſtructione ſecunda, deſcribere mechanice.

PROPOSITIO XXIII. PROBLEMA XV.

Trajectoriam deſcribere, quæ per data quatuor puncta tranſibit, & rectam continget poſitione datam.

Caſ. 1. Dentur tangens HB, punctum contactus B, & alia tria puncta C, D, P. Junge BC, & agendo PS parallelam rectæ BH, & PQ parallelam rectæ BC, comple parallelogrammum $BSPQ$. Age BD ſecantem SP in T, & CD ſecantem PQ in R. Deni-

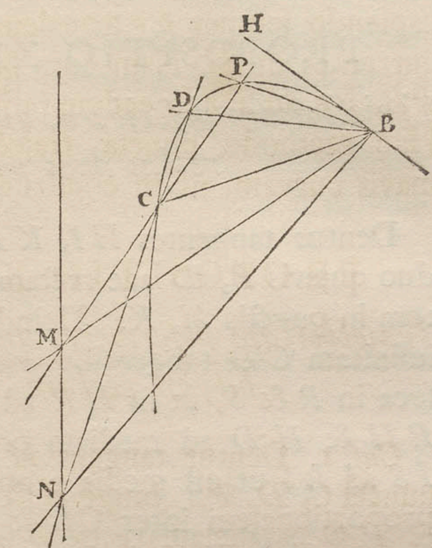


que, agendo quamvis tr ipſi TR parallelam, de PQ, PS abſcinde Pr, Pt ipſis PR, PT proportionales reſpective; & actarum Cr, Bt concurſus d (per lem. xx.) incidet ſemper in trajectoriam deſcribendam.

Idem aliter.

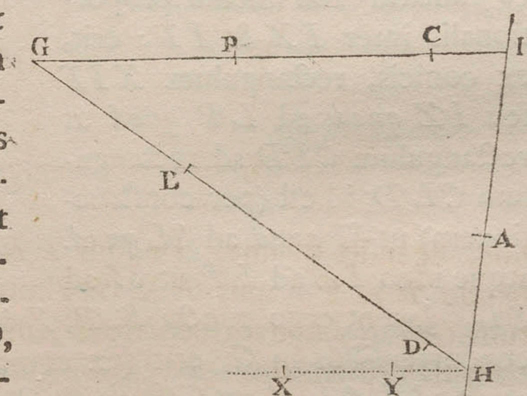
Revolvatur tum angulus magnitudine datus CBH circa polum B, tum radius quilibet rectilineus & utrinque productus DC circa polum C. Notentur puncta M, N, in quibus anguli crus BC ſecat radium illum, ubi crus alterum BH concurrit cum eodem radio in punctis P & D. Deinde ad actam infinitam MN concurrant perpetuo

petuo radius ille CP vel CD & anguli crus BC, & cruris alterius BH concurſus cum radio delineabit trajectoriam quæſitam.



Nam ſi in conſtructionibus problematis ſuperioris accedat punctum A ad punctum B, lineæ CA & CB coincident, & linea AB in ultimo ſuo ſitu fiet tangens BH; atque ideo conſtructiones ibi poſitæ evadent eædem cum conſtructionibus hic deſcriptis. Delineabit igitur cruris BH concurſus cum radio ſectionem conicam per puncta C, D, P tranſeuntem, & rectam BH tangentem in puncto B. *Q. E. F.*

Caſ. 2. Dentur puncta quatuor B, C, D, P extra tangentem HI ſita. Junge bina lineis BD, CP concurrentibus in G, tangentique occurrentibus in H & I. Secetur tangens in A, ita ut ſit HA ad IA, ut eſt rectangulum ſub media proportionali inter CG & GP & media proportionali inter BH & HD, ad rectangulum ſub media proportionali inter DG & GB & media proportionali inter PI & IC; & erit A punctum contactus. Nam ſi rectæ PI parallela HX trajectoriam ſecet in punctis quibuſvis X & Y: erit (ex conicis) punctum A ita locandum, ut fuerit HA *quad.* ad AI *quad.* in ratione compoſita ex ratione rectanguli XHY ad rectangulum BHD, ſeu rectanguli CGP ad rectangulum DGB, & ex ratione rectanguli BHD ad rectangulum PIC. Invento autem contactus puncto A, deſcribetur trajectoria ut in caſu primo. *Q. E. F.*



Capi autem poteſt punctum A vel inter puncta H & I, vel extra; & perinde trajectoria dupliciter deſcribi.

PROPO-